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# The Chem E's *Soybean* Invades Home Ec

JOE MARTIN STEPS OUT OF HIS FIELD  
TO LAUD A NEW FOOD PRODUCT

"SOYBURGER," said the chemical engineers recently, when they were asked what was served as meat at their all-soybean banquet. And so the menu went—soyburger, soybean soup, soybean noodles, soybean butter, and soybean adinfinitem.

When chemical engineers pretend to take over the duties of home economics students majoring in dietetics, it's probably only right that the girls should know about it. And that's what these chemical engineers were doing when they put on the novel all-soybean banquet last month.

Starting as the first course was soybean soup. There are many variations in this recipe, but the one selected for the dinner was a cream soup featuring the whole bean as the principal constituent. Served with the soup as a first course or a side dish was soybean green sprout salad. The salad was covered with mayonnaise made from soybean oil. The sprouts were of a 5-7 day growth, and were raised by our Horticulture Department here on the campus.

Constituting the main course was the meat substitute, soyburger, soybean macaroni, soybean cheese, soybean noodles, and baked soybeans with tomato. The soyburger is a prepared protein loaf and merely requires warming or frying before serving. Soybean macaroni and soybean noodles are products on the market and are made from soybean flour in the same manner that the regular products are made from wheat flour.

The cheese is made from the casein milk material extracted from the soybean; this milk is available on

the market in the form of the liquid or the powder. The baked soybeans require little explanation, as their preparation is the same as for any other baked bean.

Served with the main course were soybean butter, made from soybean oil, and soybean bread from soybean flour. The qualities of soybean flour should be of much interest to the homemaker, who in the future will undoubtedly use it in large amounts. Soy flour is about 15 times as rich in lime as white flour, 10 times as rich in minerals, 8 times as rich in phosphorous, 3 to 4 times as rich in protein, 10 times as rich in oil, and only 1/6 as rich in carbohydrates.

The dessert at the soybean banquet probably took the prize. It was ice cream made from soybean milk. This was served with cake made with soybean flour and a soybean blend coffee. The ice cream utilizes soybean milk, eggs, and fruit for flavoring. It cannot be differentiated from regular ice cream by taste.

The soybean is one of the most complete foods known to man at the present time. Animals can and have been raised from the weaning age to maturity on nothing but soybeans and water. In the Orient the Chinese have utilized the soybean as one of the major foods in their diet for thousands of years. It was one of the five sacred grains planted by Hou Tsi, a god of agriculture. In 2838 B.C. Sheng Nung, the emperor of China wrote a description of this plant, which was sown yearly with the greatest of ceremony by the emperor, for the soybean was considered essential to the existence of the Chinese civilization.

Yet it was not until 1804 that the soybean was first introduced into this country, at which time a few seeds were planted in Pennsylvania. Even then little was done to promote its production on any appreciable scale for use as a food or otherwise. People merely grew it in their gardens as a curio from the Far East. It has been only in recent years that interest has been taken in soybeans as a productive crop for the farmer.

The chemical engineer might consider soybeans in the light of the many material products produced therefrom, such as linoleum, plastics, paints, oilcloth, ink, soap, rubber substitutes and paper. For the homemaker, though, it is the use as a food that is most important, and to understand the nature of soybean foods, it is necessary to know the composition of the soybean.

From an average lot of soybeans the relative percentages of constituent materials are: oil, 18-20 percent; protein, 35-40 percent; carbohydrates, 10-12 percent; lecithin 1-3 percent; and starch, 0 to a mere trace.

It will not take the student in dietetics long to see the value of the high-protein soybean foods, for protein is one of the essentials to human growth, and especially to muscle building. This protein contains all of the amino acids necessary to growth and is every bit as easily and completely digested as the protein in meat. In comparison, soybeans contain one-and-a-half times as much protein as cheese, twice as much as meat or fish, three times as much as eggs, and 11 times as much as milk.

